

CLAIMS

What is claimed is:

1. An electronic device comprising:
 - 5 a display panel;
 - a display controller that controls the display panel;
 - a plurality of data lines that supply image data to the display panel, wherein the data lines include data lines for supplying red image data, data lines for supplying green image data, and data lines for supplying blue image data; and
 - 10 masking gates that mask selected ones of the data lines at predetermined times to adjust the pixel depth of the image data supplied to the display panel.
2. The electronic device according to claim 1, wherein the electronic device includes a processor coupled to the masking gates, and the processor provides one or
15 more control signals to an input of each of the masking gates.
3. The electronic device according to claim 1, wherein the electronic device includes a processor, wherein the processor is coupled to the masking gates, and the processor causes the masking gates to mask the selected ones of the data lines when
20 the electronic device is in a power saving mode.
4. The electronic device according to claim 1, wherein the masking gates are coupled to an input of the display controller.

5. The electronic device according to claim 1, further comprising a display panel interface, wherein an output of the display panel interface is coupled to an input of one or more of the masking gates.

5 6. The electronic device according to claim 1, further comprising a video buffer, wherein an output of the video buffer is coupled to an input of one or more of the masking gates.

7. The electronic device according to claim 1, wherein the electronic device is
10 a mobile telephone.

8. The electronic device according to claim 1, wherein the masking gates include an AND gate.

9. A method of reducing power consumption of an electronic device by
reducing the pixel depth of image data transmitted to a display panel, wherein the
method comprises masking selected data lines that transmit image data to the display
5 panel at certain times.

10. The method according to claim 9, wherein the method comprises masking
selected data lines that supply red image data, selected lines that supply green image
data, and selected lines that supply blue image data such that the selected data lines
10 maintain a constant level when the electronic device is in a power saving mode.

11. The method according to claim 10, wherein the data lines being masked
are a predetermined number of the least significant bits associated with each of the
lines supplying red image data, green image data, and blue image data.
15

12. The method according to claim 9, wherein the method comprises
disabling the masking when the electronic device is not in a power saving mode.

13. The method according to claim 9, wherein the masking is such that image
20 data lines that are not masked are allowed to change value according to image data
that is sent to the masking gates.

14. The method according to claim 9, wherein the masking of selected data
lines includes masking selected data lines coupled to the input of a display controller.

15. The method according to claim 9, wherein the masking is performed on
image data in a mobile telephone.

5 16. The method according to claim 9, wherein masking reduces the pixel
depth of the image data, and the method includes producing images based on a full
pixel depth, when masking is not being performed, and producing images at a
reduced pixel depth, when the masking is being performed, and the method includes
using the same image data as a source when producing images based on a full pixel
10 depth and when producing images at a reduced pixel depth.

17. A method of reducing power consumption of an electronic device by
reducing the pixel depth of video data transmitted to a display panel, wherein the
method comprises masking selected data lines that supply red image data, selected
lines that supply green image data, and selected lines that supply blue image data
5 such that the selected data lines maintain a constant level when the electronic device
is in a power saving mode.

18. The method according to claim 17, wherein the method comprises
disabling the masking when the electronic device is not in a power saving mode.

10

19. The method according to claim 17, wherein the method includes
permitting data lines that are not masked to change state according to image data
being sent to the masking gates.

15

20. The method according to claim 17, wherein the masking of selected data
lines includes masking selected data lines coupled to the input of a display controller.

21. The method according to claim 17, wherein the masking is performed on
image data in a mobile telephone.

20

22. The method according to claim 16 including employing a processor to
determine which of a plurality of data lines are the selected lines, wherein the method
further includes varying the number of selected lines to vary the power consumption
of the electronic device.